REMARKS

Reconsideration is respectfully requested in view of any changes to the claims and the remarks herein. Please contact the undersigned to conduct a telephone interview in accordance with MPEP 713.01 to resolve any remaining requirements and/or issues prior to sending another Office Action. Relevant portions of MPEP 713.01 are included on the signature page of this amendment.

No changes have been made to the claims.

The USPTO response dated October 20, 2005 at page 7 cites the following web page
http://www.nobelchannel.com/learningstudio/introduction.sps?id=295&eid=0
Which states:

> It is worth noting that there is no accepted theory to explain the high-temperature behavior of this type of compound. The BCS theory, which has proven to be a useful tool in understanding lower-temperature materials, does not adequately explain how the Cooper pairs in the new compounds hold together at such high temperatures. When Bednorz was asked how high-temperature superconductivity works, he replied, "If I could tell you, many of the theorists working on the problem would be very surprised."

Attached is a declaration under 37 CFR 1.132 of co-inventor Geroge Bednorz explaining the meaning of the statement attributed to him "If I could tell you, many of the theorists working on the problem would be very surprised" in response to a question from the interviewer about the mechanism of High Tc superconductivity. Co-inventor Geroge Bednorz states:

> "I am an experimental scientist and in the field of solid state science, because of the complexities of theory and experiment, workers in the field are either experimentalist or theorist and typically not both. In this field, including the field of high Tc superconductivity, theory utilizes complex mathematical procedures about which theorist are expert. Thus theorist working in the field would have been surprised if, I , as an experimentalist, had been the sole person in the field to gain sufficient overview and experimental and theoretical insight, to propose a final theory of high temperature superconductivity at this early stage of research."

The USPTO response dated October 20, 2005 at page 4 regarding the subject application cites Schuller et al "A Snapshot View of High Temperature Superconductivity 2002" (report from workshop on High Temperature Superconductivity held April 5-8, 2002 in San Diego) which the examiner states "discusses both the practical applications and theoretical mechanisms relating to superconductivity." The Examiner specifically refers to three passages from this article at pages 4-5 of the office action dated October 20, 2005. This affidavit is specifically directed to the notion of predictability in solid state science and the relevance of theory in fabricating materials that are High Tc superconductors.

Attached is an Affidavit of Dr. Dennis Newns, a theoretical solid state scientist under 37 CFR 1.132 commenting on the Schuller article, in particular the three paragraphs quoted by the Examiner. Dr. News states, inter alia, in paragraph 9 of his affidavit in regards to theory in solid states science in general and in regards to the well studied field of semiconductors:

> "Even with the well developed semiconductor theoretical formalisms, that theory cannot be asked the question "can you list for me all materials that will be a semiconductor?" Just as an experimentalist must do, the theoretical scientist must select a particular material for examination. If the particular material already exists an experimentalist can test that material for the semiconducting property. If the particular material does not exist, the theoretical solid state scientist must first determine what the crystal structure will be of that material. This in of itself may be a formidable theoretical problem to determine accurately. Once a crystal structure is decided on, the theoretical formalism is applied in a "theoretical experiment" to determine if the material has the arraignment of a fully filled valence and an empty valence band with the correct energy spacing. Such a theoretical experiment generally requires the use of a computer to compute the energy band structure to determine if for the selected composition the correct band configuration is present for the material to be a semiconductor. This must be verified by experiment. Even with the extensive knowledge of semiconducting properties such computations are not 100% accurate and thus theory cannot predict with 100% accuracy what material will be a semiconductor. Experimental confirmation is needed. Moreover, that a theoretical computation is a "theoretical experiment" in the conceptual

> sense not different than a physical experiment. The theorist starting out on a computation, just as an experimentalist staring out on an experiment, has an intuitive feeling that, but does not know whether, the material studied will in fact be a semiconductor. As stated above solid state scientists, both theoretical and experimental, are initially guided by physical intuition based on prior experimental and theoretical work. Experiment and theory complement each other, at times one is ahead of the other in an understanding of a problem, but which one is ahead changes over time as an understanding of the physical phenomena develops.

Thus even when there is a very well developed theory, such as for semiconductors, that theory does not provide a list of materials that are semiconductors. In the Office Action of October 20, 2005 and in other office actions the Examiner has presented a view of theory in physics and in particular in solid state science that implies that, in a field for which there is a well developed theory, no work is involved in identifying materials that have a particular property to which the theory is directed. Dr. News, a theoretical solid state scientist, in his affidavit clearly points out that a well developed theory does not do this. The theoretical scientist must engage in what Dr. Newns has referred to as a "theoretical experiment" to determine whether a particular material has the property desired. This is essentially the same as what an experimentalist does when a sample is physically made and tested for that property. A theoretical scientist does not know in advance, even with a well developed theory, whether a material will have the property desired until the "theoretical experiment " is carried out. Analogously, an experimental solid state scientist does not know in advance whether a particular material has the property desired until the sample is made and tested. In the case of a "theoretical experiment" even if the "theoretical experiment" shows that the material studied has the property, it must be made and tested to verify that the result of the "theoretical experiment" is correct. An experimantalist who sets out to fabricate and test a particular material for the desired property is no different than a theoretical scientist who sets out to investigate a particular material for that property by conducting a "theoretical experiment." Applicants and affidavits of Mitzi, Dinger, Tsuei, Shaw and Duncomb have stated and have shown factual evidence in support there of and the Poole books published in 1988 and 1985 and the article of Rao (and other documents submitted)

provide overwhelming factual evidence that High Tc superconductors can be made according to applicants teaching.

At page 6 of the Office Action dated October 20, 2005 the Examiner states:

> "The examiner does not deny that the instant application includes "all know principles of ceramic science", or that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K,* such a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at the time the application was initially filed, can make the known superconductive compositions. The numerous 1.132 declarations, such as those of Mitzi, Shaw, Dinger and Duncombe, and the Rao article, are directed to production of know superconductive materials. "

Thus the Examiner agreed that "a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at the time the application was initially filed, can make the known superconductive compositions."

At page 6 of the Office Action dated October 20, 2005 the Examiner further states:

> "What is not a "matter of routine experimentation" in this complex, unpredictable art is arriving at superconductive compositions outside the scope of the allowable claims (e.g., subsequently discovered BSCCO or Tl-systems as disclosed in Rao (see response filed 3/8/05, pages 141-143). The examiner respectfully maintains that the instant disclosure has not provided sufficient guidance to produce such materials."

Applicants respectfully disagree that the field of High Tc superconductivity is unpredictable within the meaning of the US patent law as suggested by the Examiner In In re Wands 858 F.2d 731, 742 (Fed. Cir. 1988); 8 U.S.P.Q.2D 1400 the CAFC stated "

> "[The inventor] must provide sufficient data or authority to show that his results are reasonably predictable within the scope of the claimed generic invention, based on experiment and/or scientific theory. "

Thus experiment or theory is sufficient to establish predictability. And as stated above by the Examiner "a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at the time the application was initially filed, can make the known superconductive compositions." Thus

the field of High Tc superconductivity is predictable with in the meaning of In re Wands.

The Examiner's reference to "subsequently discovered BSCCO or Tl-systems " suggests that it is the Examiner's view that for applicants to be allowed a generic claim applicants must know in advance all materials that can be used to practice applicant's claims. The CAFC has stated in Sri Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985); 227 USPQ 577, 586 that this is not necessary:

> 'The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention. The law recognizes that patent specifications are written for those skilled in the art, and requires only that the inventor describe the "best mode" known at the time to him of making and using the invention. 35 U.S.C. § 112. '

Applicants have shown that persons of ordinary skill in the art as of applicants priority date can practice applicant's claims to their full scope.

The CAFC has further stated

> "An applicant for patent is required to disclose the best mode then known to him for practicing his invention. 35 U.S.C. § 112. He is not required to predict all future developments which enable the practice of his invention in substantially the same way. " Hughes Aircraft Co. v. United States, 717 F.2d 1351, 1362 (Fed. Cir. 1983);39 USPQ2d 1065.

This is exactly what applicants have done. Thus applicant's claims are enabled.

The CAFC further states in regards to future developments:

> Enablement does not require the inventor to foresee every means of implementing an invention at pains of losing his patent franchise. Were it otherwise, claimed inventions would not include improved modes of practicing those inventions. Such narrow patent rights would rapidly become worthless as new modes of practicing the invention developed, and the inventor would lose the benefit of the patent bargain. Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1071 (Fed. Cir. 2005)

The Examiner's position in regards to the enablement of applicants' claims is inconsistent with the CAFC's position that "Enablement does not require the inventor to foresee every means of implementing an invention." Thus applicant's claims are enabled.

In view of the changes to the claims and the remarks herein, the Examiner is respectfully requested to reconsider the above-identified application. If the Examiner wishes to discuss the application further, or if additional information would be required, the undersigned will cooperate fully to assist in the prosecution of this application.

Please charge any fee necessary to enter this paper and any previous paper to deposit account 09-0468.

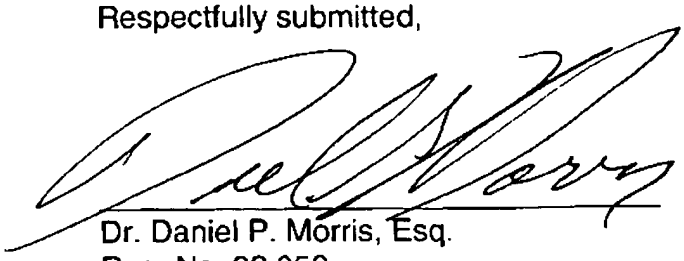
If the above-identified Examiner's Action is a final Action, and if the above-identified application will be abandoned without further action by applicants, applicants file a Notice of Appeal to the Board of Appeals and Interferences appealing the final rejection of the claims in the above-identified Examiner's Action. Please charge deposit account 09-0468 any fee necessary to enter such Notice of Appeal.

In the event that this amendment does not result in allowance of all such claims, the undersigned attorney respectfully requests a telephone interview at the Examiner's earliest convenience.

MPEP 713.01 states in part as follows:

Where the response to a first complete action includes a request for an interview or a telephone consultation to be initiated by the examiner, ... the examiner, as soon as he or she has considered the effect of the response, should grant such request if it appears that the interview or consultation would result in expediting the case to a final action.

Respectfully submitted,



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